



AFCTN Test Report

94-068

AFCTB-ID
94-046



TMSS Parsing Test

MIL-M-5096E Functional Check Flight Checklist

Document Type Definition

MAXIMA Corporation

DISA Contract #DCA100-93-D-0065

Quick Short Test Report

16 May 1994



Prepared for
Electronic Systems Center
Air Force Cals Program Office
HQ ESC/AV-2
4027 Colonel Glenn Hwy Suite 300
Dayton OH 45431-1672

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For:
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Quick Short Test Report

16 May 1994

Prepared By
Air Force CALS Test Bed
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Air Force CALS Test Bed

Notification of Test Results

16 May 1994

This notice documents the results of an Air Force CALS Test Bed (AFCTB) Quick Short Test Report (QSTR) evaluation of data submitted by:

MAXIMA Corporation

Identified as follows:

Title:	MIL-M-5096E Functional Check Flight Checklist DTD Parsing Test
Program:	DISA
Program Office:	DISA
Contract No.:	DCA100-93-D-0065
QSTR No.:	AFCTB-ID 94-046

Received on the following media: **3.5" Diskette**

The results of the AFCTB Quick Short Test evaluation are as follows:

MIL-STD-1840A Media Format:	N/A
MIL-D-28000A IGES:	N/A
MIL-M-28001A SGML:	Pass
MIL-R-28002A Raster:	N/A
MIL-D-28003 CGM:	N/A

Formal results with associated disclaimer are documented and available from the AFCTB.

**Air Force CALS Test Bed
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1. Introduction

1.1 Background

The Department of Defense (DoD) Air Force Continuous Acquisition and Life-cycle Support (CALS) Test Network (AFCTN) is conducting tests of the military standard for the Automated Interchange of Technical Information, MIL-STD-1840A, and its companion suite of military specifications. The AFCTN is a DoD sponsored confederation of voluntary participants from industry and government managed by the Electronic Systems Center (ESC).

The primary objective of the AFCTN is to evaluate the effectiveness of the CALS standards for technical data interchange and to demonstrate the technical capabilities and operational suitability of those standards. Two general categories of tests are performed to evaluate the standards; formal and informal.

Formal tests are large and comprehensive, which follow a written test plan, require specific authorization from the DoD, and may take months to prepare, execute, and report.

Informal tests are quick and short, used by the AFCTN technical staff, to broaden the testing base. They include representative samples of the many systems and applications used by AFCTN participants. They also allow the AFCTN staff to gain feedback from many industry and government interpretations of the standards, to increase the base of participation in the CALS initiative, and respond to the many requests for help that come from participants. Participants take part voluntarily, benefit by receiving an evaluation of their latest implementation (interpretation) of the standards, interact with the AFCTN technical staff, gain experience using the standards, and develop increased confidence in them. The results of informal tests are reported in Quick Short Test Reports (QSTRs) that briefly summarize the standard(s) tested, the hardware and software used, the nature of the test, and the results.

1.2 Purpose

The purpose of this informal test is to analyze Air Force Document Type Definitions (DTDs) for Standard Generalized Markup Language (SGML) syntax using several commercial and public domain SGML parsers prior to placing them in the Defense Information Systems Agency (DISA) Asset Source for Software Engineering Technology (ASSET) repository.

2. Test Parameters

Test Plan: AFCTB 94-046

Date of Evaluation: 16 May 1994

Evaluator: George Elwood
Air Force CALS Test Bed
DET 2 HQ ESC/AV-2P
4027 Colonel Glenn Hwy
Suite 300
Dayton OH 45431-1672

Data Originator: Kay Hill
MAXIMA Corporation
2372 Lakeview Drive
Beavercreek OH 45431
(513) 427-5888

Data Description: Technical Manual Test
1 DTD

Data Source System:
Text/SGML
SOFTWARE
Unknown

Evaluation Tools Used:

MIL-M-28001 (SGML)
PC 486/50
Exoterica XGMLNormalizer v1.2e3.2
Exoterica Validator v2.2 exl
SoftQuad Author/Editor v2.1
McAfee & McAdam Sema Mark-it v2.3
Public Domain sgmls v1.1

Standards Tested: MIL-M-28001A

3. 1840A Analysis

3.1 External Packaging

The 3.5" diskette was hand delivered to the Air Force CALS Test Bed (AFCTB). It was not enclosed in any type of container.

The files received by the AFCTB were not MIL-STD-1840A files. The files were not named per the standard conventions, as the stated purpose of the evaluation was the basic data structure.

4. SGML Analysis

The AFCTB has several parsers available for evaluating submitted DTD and text files. These tools are not used to generate a pass/fail but to report how commercially available software can handle the files. These products are used in the development of technical publications and are good indicators of usability. The use of these products is not an endorsement nor an indication of CALS capability. All operations were performed using the default settings unless specified in the report.

The goal was to configure the DTD under analysis as it would normally be used. However, for this analysis it was necessary to modify the DTD adding the "DOCTYPE doc [" statement to the start and the companion "]>" to the end of the DTD under evaluation, as stated in the comments of the DTD. If the parser did not support a formal file pointing to the location of the ISO character sets, this was added.

The DTD under evaluation, MIL-M-5096E, Appendix C, Functional Check Flight Checklist, called for a companion MIL-M-38784C DTD. MIL-M-38784C, Amendment three DTD, delivered on the same diskette as the DTD to be evaluated, was used. This DTD was used without change except to insert the location of the ISO character set files.

<!-- MIL-M-5096E Functional Check Flight Checklist DTD -->

D096EC0.ORG --> D784CB0.A3

The following notes apply to the parsing analysis as indicated in the ensuing paragraphs.

- Note 1. Entity parameters defined more than once is a valid SGML construct. The warnings in this analysis do not indicate any problems.
- Note 2. The occurrences of warnings "references defined, but not used," appeared because portions of the called DTD, i.e., MIL-M38784C, were not used. They were not used because the entity definitions of the DTD under analysis altered the execution path in the called DTD. The warnings in this analysis do not indicate any problems.

4.1 Exoterica Validator

The DTD file was evaluated using the Exoterica Validator *exl* parser. The basic DTD was modified by placing the concrete syntax file and "<!DOCTYPE doc [" at the start, and the "]>" at the end. The parser reported 19 errors which related to the missing instance and are not considered errors for this analysis.

The parser reported 98 total warnings of two types. The first was a parameter entity declared more than once. See Note 1 above.

```
<!-- **Warning** in "i:\dtd\784c.dtd" (entity "%m38784c"), line 37,  
     used in "\xgml\9446.dtd", line 1:  
     A parameter entity name has been declared more than once.  
     The entity is "%shorttitleuse".  
     <!ENTITY % shorttitleuse "IGNORE" >  
          ^^^^^^^^^^  
-->
```

The second type of warnings relate to elements defined but not used in any content model. See Note 2 above.

```
<!-- **Warning** in "\xgml\9446.dtd", line 1:  
     An element is not allowed in the document instance because it does not  
     appear in any accessible content model or it is completely excluded.  
     The element is "ABBRSECT".  
-->
```

4.2 Exoterica XGML Normalizer

The DTD file was parsed using the Exoterica *XGMLNormalizer* parser. The concrete syntax and "<!DOCTYPE doc [" were added to the start, and "]>" to the end of the file. No errors or warnings were issued by this utility.

4.3 Sema Mark-it

The DTD file was evaluated using McAfee & McAdam's *Sema Mark-it* v2.3 parser. The file was modified by adding the concrete syntax and "<!DOCTYPE doc [" to the start, and "]>" to the end of the file. The base line D784CB0.A3 file was used. The only change made to this file was to save it using UNIX format to remove the DOS end of file character. One error was reported and this relates to a missing instance. This is not considered an error for this report.

4.4 Public Domain sgmls

The DTD file was evaluated using the Public Domain *sgmls* parser version 1.0. The file was modified by adding the "<!DOCTYPE doc [" to the start, and "]>" to the end of the file as stated in the comments in the DTD. The basic 38784C.A3 file was used as the point to file. This file was modified by removing the start and end statements. This DTD remained modified to point to the ISO character sets. Seventeen warnings were reported by the parser, all of which were duplicate definitions. See Note 1 above.

```
sgmls: In file included at 9446.dtd, line 100:  
      Warning at i:\dtd\784c.dtd, line 37 in declaration parameter 2:  
      Duplicate specification occurred for "%shorttitleuse"; duplicate  
      ignored
```

The following is the command line used to parse the DTD.

```
C:\EN450>sgmls concrete.syn 9444.dtd -f9444.log -c9444.cap  
-s -u -r -l -g -d -p -e
```

4.5 SoftQuad Author/Editor

The DTD file was evaluated using SoftQuad's Author/Editor parser. The DTD was modified to point to the previously parsed basic 38784C.A3 DTD. This file had been set to point to the ISO character set. One error was reported during this operation. This product reported an ambiguous content model in the subfig element in the basic 38784C.DTD. The tag is shown below.

Error in Document Type Declaration at offset 2067 of the input stream,
on line 1 of the document: Ambiguous content model.

An instance of element GRAPHIC could simultaneously match two or more
tokens in the content model.

Error occurred in the content of parameter entity "m38784c".

```
<!ELEMENT subfig  - - ((graphic | macrograph) & figtable? &
                      legend?) >
<!ATTLIST subfig  %secur; >
```

SoftQuad has identified this as an error in their product which
will be corrected in the next release of their software.

5. Conclusions and Recommendations

The file D096EC0.ORG, MIL-L-5096E, Appendix C, conforms to the SGML syntax of ISO Standard 8879, as required by the CALS MIL-M-28001B specification.

The errors, warnings, and comments reported by the parsers used in this evaluation do not indicate any syntactical variances, nor indicate any problem that would invalidate the effective application of this DTD.

6. Appendix A - Detailed SGML Analysis

6.1 Exoterica Validator

```
<!-- **Warning** in "i:\dtd\784c.dtd" (entity "%m38784c"), line 37,
   used in "\xgml\9446.dtd", line 1:
A parameter entity name has been declared more than once.
The entity is "%shortitleuse".
<!ENTITY % shortitleuse "IGNORE" >
   ^^^^^^^^^^

-->
<!-- **Warning** in "i:\dtd\784c.dtd" (entity "%m38784c"), line 45,
   used in "\xgml\9446.dtd", line 1:
A parameter entity name has been declared more than once.
The entity is "%shortitle".
<!ENTITY % shortitle " " >
   ^^^^^^^^^^

-->
<!-- **Warning** in "i:\dtd\784c.dtd" (entity "%m38784c"), line 47,
   used in "\xgml\9446.dtd", line 1:
A parameter entity name has been declared more than once.
The entity is "%yesorno".
<!ENTITY % yesorno "NUMBER" >
   ^^^^^^

-->
<!-- **Warning** in "i:\dtd\784c.dtd" (entity "%m38784c"), line 50,
   used in "\xgml\9446.dtd", line 1:
A parameter entity name has been declared more than once.
The entity is "%itemid".
<!ENTITY % itemid
   ^^^^^^

-->
<!-- **Warning** in "i:\dtd\784c.dtd" (entity "%m38784c"), line 62,
   used in "\xgml\9446.dtd", line 1:
A parameter entity name has been declared more than once.
The entity is "%content".
<!ENTITY % content
   ^^^^^^

-->
<!-- **Warning** in "i:\dtd\784c.dtd" (entity "%m38784c"), line 71,
   used in "\xgml\9446.dtd", line 1:
A parameter entity name has been declared more than once.
The entity is "%bodyatt".
<!ENTITY % bodyatt
   ^^^^^^

-->
```

```
<!-- **Warning** in "i:\dtd\784c.dtd" (entity "%m38784c"), line 107,
   used in "\xgml\9446.dtd", line 1:
A parameter entity name has been declared more than once.
The entity is "%frnt".
<!ENTITY % frnt "(idinfo, warnpage?, chginssht?, lep, verstat?,
   ^^^^

-->
<!-- **Warning** in "i:\dtd\784c.dtd" (entity "%m38784c"), line 111,
   used in "\xgml\9446.dtd", line 1:
A parameter entity name has been declared more than once.
The entity is "%tidinf".
<!ENTITY % tidinf "(tmidno+, pretmidno*, volnum?, docpartn?,
   ^^^^

-->
<!-- **Warning** in "i:\dtd\784c.dtd" (entity "%m38784c"), line 138,
   used in "\xgml\9446.dtd", line 1:
A parameter entity name has been declared more than once.
The entity is "%step1con".
<!ENTITY % step1con "(warning*, caution*, note*, para, note*),
   ^^^^^^^

-->
<!-- **Warning** in "i:\dtd\784c.dtd" (entity "%m38784c"), line 141,
   used in "\xgml\9446.dtd", line 1:
A parameter entity name has been declared more than once.
The entity is "%step2con".
<!ENTITY % step2con "(warning*, caution*, note*, para, note*),
   ^^^^^^^

-->
<!-- **Warning** in "i:\dtd\784c.dtd" (entity "%m38784c"), line 144,
   used in "\xgml\9446.dtd", line 1:
A parameter entity name has been declared more than once.
The entity is "%step3con".
<!ENTITY % step3con "(warning*, caution*, note*, para, note*),
   ^^^^^^^

-->
<!-- **Warning** in "i:\dtd\784c.dtd" (entity "%m38784c"), line 147,
   used in "\xgml\9446.dtd", line 1:
A parameter entity name has been declared more than once.
The entity is "%step4con".
<!ENTITY % step4con "(warning*, caution*, note*, para, note*),
   ^^^^^^^

-->
<!-- **Warning** in "i:\dtd\784c.dtd" (entity "%m38784c"), line 150,
   used in "\xgml\9446.dtd", line 1:
A parameter entity name has been declared more than once.
The entity is "%step5con".
<!ENTITY % step5con "(warning*, caution*, note*, para, note*),
   ^^^^^^
```

```
-->
<!-- **Warning** in "i:\dtd\784c.dtd" (entity "%m38784c"), line 153,
   used in "\xgml\9446.dtd", line 1:
A parameter entity name has been declared more than once.
The entity is "%step6con".
<!ENTITY % step6con "(warning*, caution*, note*, para, note*),
   ^^^^^^^^

-->
<!-- **Warning** in "i:\dtd\784c.dtd" (entity "%m38784c"), line 156,
   used in "\xgml\9446.dtd", line 1:
A parameter entity name has been declared more than once.
The entity is "%step7con".
<!ENTITY % step7con "(warning*, caution*, note*, para, note*)" >
   ^^^^^^^^

-->
<!-- **Warning** in "i:\dtd\784c.dtd" (entity "%m38784c"), line 165,
   used in "\xgml\9446.dtd", line 1:
A parameter entity name has been declared more than once.
The entity is "%bodyele".
<!ENTITY % bodyele "(chapter, chapter+, ddchapter?)" >
   ^^^^^^^^

-->
<!-- **Warning** in "i:\dtd\784c.dtd" (entity "%m38784c"), line 185,
   used in "\xgml\9446.dtd", line 1:
A parameter entity name has been declared more than once.
The entity is "%chap".
<!ENTITY % chap "%titles;, ((section, section+) | para0+),
   ^^^^

-->
<!-- **Warning** in "\xgml\9446.dtd", line 1:
An element is not allowed in the document instance because it does not
appear in any accessible content model or it is completely excluded.
The element is "ABBRSECT".
-->
```

<<<< EXTRA LINES REMOVED >>>>

The element is "ADDRESS".
The element is "APPENDIX".
The element is "BRK".
The element is "CHGDATE".
The element is "CHGHISTDATE".
The element is "CHGINSSHT".
The element is "CHGLIST".
The element is "CHGNUM".
The element is "CHGREC".
The element is "CONTENTS".
The element is "CONTRACTNO".

The element is "DATE".
The element is "DATEINC".
The element is "DDCHAPTER".
The element is "DDDESC".
The element is "DDINDEX".
The element is "DDINTRO".
The element is "DDLIST".
The element is "DDSHEET".
The element is "DESTR".
The element is "DISCL".
The element is "DOC".
The element is "DOCPART".
The element is "DOCPARTN".
The element is "DOCTYPE".
The element is "DOWNGRD".
The element is "ECPNO".
The element is "EQPTTYPE".
The element is "EXPCONT".
The element is "FOLDSECT".
The element is "FOREWORD".
The element is "GLOSSARY".
The element is "ILLUSLIST".
The element is "INDEX".
The element is "INSERTPG".
The element is "INTERNATLSTD".
The element is "INTRO".
The element is "LEP".
The element is "LRP".
The element is "MAINTLVL".
The element is "MFR".
The element is "MODELNO".
The element is "NOMEN".
The element is "NSN".
The element is "OADR".
The element is "ORIGDATE".
The element is "PARTNO".
The element is "PGBRK".
The element is "PGNO".
The element is "PHRASE".
The element is "PRECAUT".
The element is "PREFACE".
The element is "PRETMIDNO".
The element is "PRTITLE".
The element is "PSLIST".
The element is "RATD".
The element is "REAR".
The element is "REMARKS".
The element is "REMOVEPG".

The element is "RENUM".
The element is "SAFESUM".
The element is "SEAL".
The element is "SECTION".
The element is "SERNO".
The element is "SHORTTITLE".
The element is "STITLE".
The element is "SUBJECT".
The element is "SUPERSED".
The element is "SUPPL".
The element is "SYMSECT".
The element is "TABLELIST".
The element is "TCTOLIST".
The element is "TCTONO".
The element is "TMIMPREP".
The element is "TYPENO".
The element is "VERSTAT".
The element is "VOLNOT".
The element is "VOLNUM".
The element is "VOLUME".
The element is "WARNPAGE".

TOTALCAP =106770/200000
ENTCAP =12800/200000
ENTCHCAP =13107/70000
ELEMCP =4992/70000
GRPCAP =25504/70000
EXGRPCAP =704/70000
EXNMCAP =1184/70000
ATTCP =31136/200000
ATTCHCAP =764/70000
AVGRPCAP =16320/70000
NOTCAP =96/70000
NOTCHCAP =163/70000
IDCAP =0/70000
IDREFCAP =0/70000
MAPCAP =0/70000
LKSETCAP =0/70000
LKNMCAP =0/70000

-->

<<<< ERRORS FROM THIS POINT ON RELATE TO NO DOCUMENT INSTANCE AND ARE NOT CONSIDERED
FOR THIS REPORT >>>>

<!-- **Error** in "\xgml\9446.dtd", line 1:
The document instance must consist of at least one tag or data character.
The following element can start: "DOFCFCFL".

```
-->
<!-- **Error** in "\xgml\9446.dtd", line 1:
The start tag of an element that has one or more required attributes must
not be omitted.
Attribute "DOCID" of element "DOFCFCFCL" is REQUIRED.
-->
```

<<<< PART OF LOG FILE REMOVED HERE >>>>

```
<!-- **Error** in "\xgml\9446.dtd", line 1:
An end tag that has been declared inomissible ("--") must not be omitted. The element i
"DOFCFCFCL".
-->
<!-- Capacity points/limits:
TOTALCAP =106770/200000
ENTCAP =12800/200000
ENTCHCAP =13107/70000
ELEMCAP =4992/70000
GRPCAP =25504/70000
EXGRPCAP =704/70000
EXNMCAP =1184/70000
ATTCAP =31136/200000
ATTCHCAP =764/70000
AVGRPCAP =16320/70000
NOTCAP =96/70000
NOTCHCAP =163/70000
IDCAP =0/70000
IDREFCAP =0/70000
MAPCAP =0/70000
LKSETCAP =0/70000
LKNMCAP =0/70000
-->
<!-- 19 errors and 98 warnings reported. -->
```

6.2 Exoterica XGMLNormalizer Parser

No reported errors or warnings.

6.3 Public Domain sgmls Log

```
sgmls: In file included at 9446.dtd, line 100:
    Warning at i:\dtd\784c.dtd, line 37 in declaration parameter 2:
    Duplicate specification occurred for "%shortitleuse"; duplicate ignored
sgmls: In file included at 9446.dtd, line 100:
    Warning at i:\dtd\784c.dtd, line 45 in declaration parameter 2:
    Duplicate specification occurred for "%shortitle"; duplicate ignored
sgmls: In file included at 9446.dtd, line 100:
    Warning at i:\dtd\784c.dtd, line 47 in declaration parameter 2:
    Duplicate specification occurred for "%yesorno"; duplicate ignored
sgmls: In file included at 9446.dtd, line 100:
    Warning at i:\dtd\784c.dtd, line 50 in declaration parameter 2:
    Duplicate specification occurred for "%itemid"; duplicate ignored
sgmls: In file included at 9446.dtd, line 100:
    Warning at i:\dtd\784c.dtd, line 62 in declaration parameter 2:
    Duplicate specification occurred for "%content"; duplicate ignored
sgmls: In file included at 9446.dtd, line 100:
    Warning at i:\dtd\784c.dtd, line 71 in declaration parameter 2:
    Duplicate specification occurred for "%bodyatt"; duplicate ignored
sgmls: In file included at 9446.dtd, line 100:
    Warning at i:\dtd\784c.dtd, line 107 in declaration parameter 2:
    Duplicate specification occurred for "%frnt"; duplicate ignored
sgmls: In file included at 9446.dtd, line 100:
    Warning at i:\dtd\784c.dtd, line 111 in declaration parameter 2:
    Duplicate specification occurred for "%idinf"; duplicate ignored
sgmls: In file included at 9446.dtd, line 100:
    Warning at i:\dtd\784c.dtd, line 138 in declaration parameter 2:
    Duplicate specification occurred for "%step1con"; duplicate ignored
sgmls: In file included at 9446.dtd, line 100:
    Warning at i:\dtd\784c.dtd, line 141 in declaration parameter 2:
    Duplicate specification occurred for "%step2con"; duplicate ignored
sgmls: In file included at 9446.dtd, line 100:
    Warning at i:\dtd\784c.dtd, line 144 in declaration parameter 2:
    Duplicate specification occurred for "%step3con"; duplicate ignored
sgmls: In file included at 9446.dtd, line 100:
    Warning at i:\dtd\784c.dtd, line 147 in declaration parameter 2:
    Duplicate specification occurred for "%step4con"; duplicate ignored
sgmls: In file included at 9446.dtd, line 100:
    Warning at i:\dtd\784c.dtd, line 150 in declaration parameter 2:
    Duplicate specification occurred for "%step5con"; duplicate ignored
```

```
sgmls: In file included at 9446.dtd, line 100:  
    Warning at i:\dtd\784c.dtd, line 153 in declaration parameter 2:  
    Duplicate specification occurred for "%step6con"; duplicate ignored  
sgmls: In file included at 9446.dtd, line 100:  
    Warning at i:\dtd\784c.dtd, line 156 in declaration parameter 2:  
    Duplicate specification occurred for "%step7con"; duplicate ignored  
sgmls: In file included at 9446.dtd, line 100:  
    Warning at i:\dtd\784c.dtd, line 165 in declaration parameter 2:  
    Duplicate specification occurred for "%bodyele"; duplicate ignored  
sgmls: In file included at 9446.dtd, line 100:  
    Warning at i:\dtd\784c.dtd, line 185 in declaration parameter 2:  
    Duplicate specification occurred for "%chap"; duplicate ignored  
TOTALCAP 103947/200000  
    ENTCAP 12800/200000  
    ENTCHCAP 10252/200000  
    ELEMCAP 4992/200000  
    GRPCAP 25504/200000  
    EXGRPCAP 736/200000  
    EXNMCAP 1184/200000  
    ATTCCAP 31136/200000  
    ATTCHCAP 764/200000  
    AVGRPCAP 16320/200000  
    NOTCAP 96/200000  
    NOTCHCAP 163/200000
```

6.4 Sema Mark-it Log

```
<!--*** file:C:\XGML\9446.DTD line:203 pos:5739  
Document entity ended illegally  
(or illegal end of entity in the main document) -->
```

6.5 SoftQuad Author/Editor Log

Error in Document Type Declaration at offset 1105 of the input stream,
on line 1 of the document: Ambiguous content model.
An instance of element FIGTABLE could simultaneously match two or more
tokens in the content model.
Error occurred in the content of parameter entity "m38784c".

Below is the area in the DTD that was addressed.

```
<!ELEMENT subfig      - - ((graphic | macrograph) & figtable? &  
                           legend?) >  
<!ATTLIST subfig    %secur; >
```